

CLAIMS

1. A method for storing staggercasted content, comprising the steps of:
encoding a set of signals representing content, the set capable of being
decoded to produce a corresponding set of decoded signals, each decoded signal
5 having a quality different from the qualities of the decoded signals corresponding to
the other encoded signals;
generating a composite signal comprising the set of encoded signals
staggered in time;
extracting the set of encoded signals from the composite signal;
10 detecting errors in the set of extracted encoded signals to produce a subset of
available extracted encoded signals which are not erroneous;
decoding a content representative signal at a selectable desired quality; and
storing the decoded content representative signal in a storage device.
2. The method of claim 1 wherein if a content representative signal at the
15 desired quality is not available, decoding a content representative signal at a
selectable desired quality from the subset of available extracted encoded signals and
storing the decoded content representative signal.
3. The method of claim 2 wherein the decoding step comprises the step of
selecting the content representative signal at the desired quality automatically.
- 20 4. The method of claim 3 wherein the step of selecting the desired quality
automatically comprises the step of selecting the desired quality in response to preset
selection parameters.
5. The method of claim 4 wherein the parameters are preset in response
to user input.

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6. The method of claim 1 wherein the step of selecting the desired quality automatically comprises the step of selecting the desired quality in response to the status of the storage device.

5 7. The method of claim 6 wherein if the status of the storage device indicates that the storage device is nearly full, the desired quality is automatically a lower quality.

8. The method of claim 1 wherein the decoding step comprises the step of selecting the desired quality in response to user input.

10 9. The method of claim 8 wherein the step of selecting the desired quality in response to user input comprises the steps of:
displaying an image representing information related to the encoded set of signals; and
receiving user input after displaying the information display.

15 10. The method of claim 9 wherein:
the content representative signal represents a television program;
the step of generating a composite signal comprises the step of further including a signal carrying information related to the television program comprising the respective qualities of the set of encoded content representative signal; and
the step of displaying an image of the encoded signal representative
20 information comprises listing the information related to the television program and the qualities of the set of encoded signals.

11. The method of claim 10 wherein the television program information carrying signal carries data representing either or both of a program map table (PMT) and a program and information systems protocol-virtual channel table (PSIP-VCT).

25 12. The method of claim 1 wherein the composite signal generating step comprises generating the set of encoded signals such that a lowest quality decoded

signal is undelayed, and the other encoded signals are delayed with respect to the encoded signal corresponding to the lowest quality decoded signal such that the higher the quality of the corresponding decoded signal, the longer the delay period.

13. The method of claim 1 wherein the encoding step comprises the step of
5 encoding at least one of the set of encoded signals using a technique which is robust relative to the encoding of the other encoded signals.

14. The method of claim 13 wherein the at least one robust encoded signal comprises the encoded signal corresponding to the lowest quality decoded signal.

15. The method of claim 13 wherein the set of encoded signals are channel
10 encoded, and the robust encoded signals are channel encoded using a channel coding technique robust relative to the channel coding technique used for the non-robust encoded signals.

16. The method of claim 15 wherein the channel coding for the robust
15 encoded signals is one of 4-VSB or 2-VSB modulation and the channel coding for the non-robust encoded signals is 8-VSB modulation.

17. A staggercasting receiver, for receiving a composite signal comprising a
set of encoded signals, staggered in time, representing content, the set capable of
being decoded to produce a corresponding set of decoded signals, each decoded
signal having a quality different from the qualities of the decoded signals
20 corresponding to the other encoded signals, the receiver comprising:

a demultiplexer, responsive to the composite signal, for extracting the set of
encoded signals, detecting errors in respective encoded signals, and producing a
subset of available extracted signals which are not erroneous;

a decoder, coupled to the demultiplexer and responsive to the error
25 representative signal, for reproducing a content representative signal at a selectable
desired quality; and

a storage device, coupled to the decoder, for storing the reproduced content representative signal.

18. The receiver of claim 17 wherein the decoder comprises circuitry for reproducing a content representative signal at the highest quality from the subset of available extracted encoded signals.

19. The receiver of claim 17 wherein the decoder comprises circuitry for reproducing a content representative signal at a selectable desired quality from the subset of available extracted encoded signals is a content representative signal at the desired quality is not available.

20. The receiver of claim 19 wherein the decoder further comprises circuitry for automatically reproducing the content representative signal at the desired quality.

21. The receiver of claim 20 wherein the decoder further comprises circuitry for storing preset selection parameters, and for automatically reproducing the content representative signal at the desired quality in response to the selection parameters.

22. The receiver of claim 17 wherein:
the storage device generates a signal representing the status of the storage device; and
the decoder comprises circuitry for automatically reproducing the content representative signal at the desired quality in response to the status representative signal.

23. The receiver of claim 22 wherein the decoder automatically reproduces the content representative signal at a lower quality in response to the status representative signal indicating that the storage device is nearly full.

24. The receiver of claim 21 wherein further comprises circuitry for storing selection parameters in response to user input.

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25. The receiver of claim 17 wherein the decoder comprises circuitry for reproducing the content representative signal at the desired quality in response to user input.

5 26. The receiver of claim 25 further comprising an on-screen-display device for displaying an image representing information related to the encoded set of signals.

27. The receiver of claim 26 wherein
the content representative signal is a television program and the composite
signal further comprises a signal carrying information related to the television
10 program comprising the respective qualities of the set of encoded content
representative signal; and
the on-screen-display device displays a listing of the information related to the
television program and the qualities of the set of encoded signals.

15 28. The receiver of claim 27 wherein the television program information
carrying signal carries data representing either or both of a program map table (PMT)
and a program and information systems protocol-virtual channel table (PSIP-VCT).

20 29. The receiver of claim 17 wherein at least one of the set of encoded
signals is encoded using a technique which is robust relative to the encoding of the
other signals, and the decoder comprises a decoder, responsive to the at least one
encoded signal, for decoding the at least one encoded signal.

30. The receiver of claim 29 wherein the at least one robust encoded signal
comprises the encoded signal corresponding to the lowest quality decoded signal.

31. The receiver of claim 30 wherein:
the set of encoded signals are channel coded, and the robust encoded signals
25 are channel encoded using one of 4-VSB or 2-VSB modulation and the other
encoded signals are channel encoded using 8-VSB modulation; and

the decoder comprises a demodulator for channel decoding the robust encoded signals using one of 4-VSB or 2-VSB demodulation and channel decoding the other encoded signals using 8-VSB demodulation.

32. The receiver of claim 17 wherein

5 the composite signal comprises the set of encoded signals such that a lowest quality decoded signal is undelayed, and the other encoded signals are delayed with respect to the encoded signal corresponding to the lowest quality decoded signal such that the higher the quality of the corresponding decoded signal, the longer the delay period; and

10 the receiver further comprising a plurality of delay circuits, coupled between the demultiplexer and the decoder and respectively responsive to the set of extracted encoded signals, for realigning the extracted encoded signals in time.